#4

PCT09

ENTERED

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/914,604

DATE: 02/27/2002
TIME: 13:52:50

Input Set : A:\Pa99121.app
Output Set: N:\CRF3\02272002\I914604.raw

```
 3 <110> APPLICANT: Reeve, Michael Alan
 4         Workman, Nicholas Ian
 5         Martin-Parras, Luis
.7 <120> TITLE OF INVENTION: Genetic Analysis
 9 <130> FILE REFERENCE: PA9912
11 <140> CURRENT APPLICATION NUMBER: 09/914,604
12 <141> CURRENT FILING DATE: 2001-08-28
14 <150> PRIOR APPLICATION NUMBER: PCT/GB00/00916
15 <151> PRIOR FILING DATE: 2000-03-10
17 <150> PRIOR APPLICATION NUMBER: EPO 99301933.0
18 <151> PRIOR FILING DATE: 1999-03-12
20 <160> NUMBER OF SEQ ID NOS: 32
22 <170> SOFTWARE: PatentIn Ver. 2.1
24 <210> SEQ ID NO: 1
25 <211> LENGTH: 3954
26 <212> TYPE: DNA
27 <213> ORGANISM: Artificial Sequence
29 <220> FEATURE:
30 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
31         Plasmid
33 <400> SEQUENCE: 1
34 tcgcgcgttt cggtgatgac ggtgaaaacc tctgacacat gcagctcccg gagacggtca 60
35 cagcttgtct gtaagcggat gccgggagca gacaagcccg tcagggcgcg tcagcgggtg 120
36 ttggcgggtg tcggggctgg cttaactatg cggcatcaga gcagattgta ctgagagtgc 180
37 accatatgcg gtgtgaaata ccgcacagat gcgtaaggag aaaataccgc atcaggcgcc 240
38 attcgccatt caggctgcgc aactgttggg aagggcgatc ggtgcgggcc tcttcgctat 300
39 tacgccagct ggcgaaaggg ggatgtgctg caaggcgatt aagttgggta acgccagggt 360
40 tttcccagtc acgacgttgt aaaacgacgg ccagtgaatt cgagctcggt accgggcccc 420
41 ccctcgaggt cgacggtatc gataagcttg atcgcagctg gtaatccgga cgccgcgtc 480
42 gaagatgttg gggtgttgta acaatatcga ttccaattca gcggggggcca cctgatatcc 540
43 tttgtattta attaaagact tcaagcggtc aactatgaag aagtgttcgt cttcgtccca 600
44 gtaaggatcc gcactttgaa ttttgtaatc ctgaagggat cgtaaaaaca gctcttcttc 660
45 aaatctatac attaagacga ctcgaaatcc acatatcaaa tatccgagtg tagtaaacat 720
46 tccaaaaccg tgatggaatg gaacaacact taaatgtaca ccctggtaat ccgtttaga 780
47 atccatgata ataattttct ggattattgg taattttttt tgcacgttca aaatttttg 840
48 caaccccttt ttggaaacaa acactacggt aggctgcgaa atgttcatac tgttgagcaa 900
49 ttcacgttca ttataagctt ttcactgcat acgacgattc tgtgatttgt attcagccca 960
50 tatcgtttca tagcttctgc caaccgaacg gacatttcga agtattccgc gtacgtgatg 1020
51 ttcacctcga tatgtgcatc tgtaaaagca attgttccag gaaccagggc gtatctcttc 1080
52 atagccatgg aatacgcctt tttcagtgtt gcgatgctaa tgccgttaca aataatccga 1140
53 gcaccaagaa tggctgcgcg cttgcctggt acttgacgtc gtatttgacg gggtccttga 1200
54 gaaagtattt aaactggaac acaatctgag gaatgatcaa agcaaccaac gccaacgcat 1260
55 aataactagt gcaataccaa gacctcccaa taatagcacc cagacttgtg taataacctc 1320
```

```
 56 tggctctgat attgctccag atggaattgg acgatatggc tcattaattg cgtcgatatc 1380
 57 tctatcatac cagtcgttga ttgtctgtgt atagccagta agacaaggac cagacatcat 1440
 58 catgcaaaga atcgcttaag cccttcttgg cctttatgag gatctctctg attttttcttg 1500
 59 cgtcgagttt tccggtaaga cctttcggta cttcgtccac aaacacaact cctccgcgca 1560
 60 acttttttcgc ggttgttact tgactggcca cgtaatccac gatctcttt tccgtcatcg 1620
 61 tctttccgtg ctccaaaaca acaacggcgg cgggtccgga ttaccagctg cgatcaagct 1680
 62 tatcgatacc gtcgacctcg acctgcaggc atgcaagctt ggcgtaatca tggtcatagc 1740
 63 gttttcctgt gtgaaattgt tatccgctca caattccaca caacatacga gccggaagca 1800
 64 taaagtgtaa agcctggggt gcctaatgag tgagctaact cacattaatt gcgttgcgct 1860
 65 cactgcccgc tttccagtcg ggaaacctgt cgtgccagct gcattaatga atcggccaac 1920
 66 gcgcggggag aggcggtttg cgtattgggc gctcttccgc ttcctcgctc actgactcgc 1980
 67 tgcgctcggt cgttcggctg cggcgagcgg tatcagctca ctcaaaggcg gtaatacggt 2040
 68 tatccacaga atcaggggat aacgcaggaa agaacatgtg agcaaaaggc cagcaaaagg 2100
 69 ccaggaaccg taaaaaggcc gcgttgctgg cgttttttcca taggctccgc ccccctgacg 2160
 70 agcatcacaa aaatcgacgc tcaagtcaga ggtggcgaaa cccgacagga ctataaagat 2220
 71 accaggcgtt tccccctgga agctccctcg tgcgctctcc tgttccgacc ctgccgctta 2280
 72 ccggatacct gtccgccttt ctcccttcgg gaagcgtggc gctttctcat agctcacgct 2340
 73 gtaggtatct cagttcggtg taggtcgttc gctccaagct gggctgtgtg cacgaacccc 2400
 74 ccgttcagcc cgaccgctgc gccttatccg gtaactatcg tcttgagtcc aacccggtaa 2460
 75 gacacgactt atcgccactg gcagcagcca ctggtaacag gattagcaga gcgaggtatg 2520
 76 taggcggtgc tacagagttc ttgaagtggt ggcctaacta cggctacact agaaggacag 2580
 77 tatttggtat ctgcgctctg ctgaagccag ttaccttcgg aaaaagagtt ggtagctctt 2640
 78 gatccggcaa acaaaccacc gctggtagcg gtggtttttt tgtttgcaag cagcagatta 2700
 79 cgcgcagaaa aaaaggatct caagaagatc ctttgatctt ttctacgggg tctgacgctc 2760
 80 agtggaacga aaactcacgt taagggattt tggtcatgag attatcaaaa aggatcttca 2820
 81 cctagatcct tttaaattaa aaatgaagtt ttaaatcaat ctaaagtata tatgagtaaa 2880
 82 cttggtctga cagttaccaa tgcttaatca gtgaggcacc tatctcagcg atctgtctat 2940
 83 ttcgttcatc catagttgcc tgactccccg tcgtgtagat aactacgata cgggagggct 3000
 84 taccatctgg ccccagtgct gcaatgatac cgcgagaccc acgctcaccg gctccagatt 3060
 85 tatcagcaat aaaccagcca gccggaaggg ccgagcgcag aagtggtcct gcaactttat 3120
 86 ccgcctccat ccagtctatt aattgttgcc gggaagctag agtaagtagt tcgccagtta 3180
 87 atagtttgcg caacgttgtt gccattgcta caggcatcgt ggtgtcacgc tcgtcgtttg 3240
 88 gtatggcttc attcagctcc ggttcccaac gatcaaggcg agttacatga tcccccatgt 3300
 89 tgtgcaaaaa agcggttagc tccttcggtc ctccgatcgt tgtcagaagt aagttggccg 3360
 90 cagtgttatc actcatggtt atggcagcac tgcataattc tcttactgtc atgccatccg 3420
 91 taagatgctt ttctgtgact ggtgagtact caaccaagtc attctgagaa tagtgtatgc 3480
 92 ggcgaccgag ttgctcttgc ccggcgtcaa tacgggataa taccgcgcca catagcagaa 3540
 93 ctttaaaagt gctcatcatt ggaaaacgtt cttcggggcg aaaactctca aggatcttac 3600
 94 cgctgttgag atccagttcg atgtaaccca ctcgtgcacc caactgatct tcagcatctt 3660
 95 ttactttcac cagcgtttct gggtgagcaa aaacaggaag gcaaaatgcc gcaaaaaagg 3720
 96 gaataagggc gacacggaaa tgttgaatac tcatactctt cctttttcaa tattattgaa 3780
 97 gcatttatca gggttattgt ctcatgagcg gatacatatt tgaatgtatt tagaaaaata 3840
 98 aacaaatagg ggttccgcgc acatttcccc gaaaagtgcc acctgacgtc taagaaacca 3900
 99 ttattatcat gacattaacc tataaaaata ggcgtatcac gaggcccttt cgtc      3954
102 <210> SEQ ID NO: 2
103 <211> LENGTH: 37
104 <212> TYPE: DNA
105 <213> ORGANISM: Artificial Sequence
107 <220> FEATURE:
```

RAW SEQUENCE LISTING   DATE: 02/27/2002
PATENT APPLICATION: US/09/914,604   TIME: 13:52:50

Input Set : A:\Pa99121.app
Output Set: N:\CRF3\02272002\I914604.raw

```
108 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
109        Oligonucleotide
111 <400> SEQUENCE: 2
112 cgcagctggt aatccggacg cccgcgtcga agatgtt                           37.
115 <210> SEQ ID NO: 3
116 <211> LENGTH: 36
117 <212> TYPE: DNA
118 <213> ORGANISM: Artificial Sequence
120 <220> FEATURE:
121 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
122        Oligonucleotide
124 <400> SEQUENCE: 3
125 cgcagctggt aatccggacc cgccgccgtt gttgtt                            36
128 <210> SEQ ID NO: 4
129 <211> LENGTH: 2946
130 <212> TYPE: DNA
131 <213> ORGANISM: Artificial Sequence
133 <220> FEATURE:
134 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
135        Plasmid
137 <400> SEQUENCE: 4
138 atgaccatga ttacgccaag ctctaatacg actcactata gggaaagctt ccggacgtct 60
139 caggctaatg ttggcccacc gacgttccac gatggggcgc tcttaagggc ttagaccctc 120
140 gtcgggagta tttctgtgat ctggcgacac tcacgcgaga agtcattacc ggcgatatga 180
141 attcactggc cgtcgtttta caacgtcgtg actgggaaaa ccctggcgtt acccaactta 240
142 atcgccttgc agcacatccc cctttcgcca gctggcgtaa tagcgaagag gcccgcaccg 300
143 atcgcccttc ccaacagttg cgcagcctga atggcgaatg gaaattgta aacgttaata 360
144 ttttgttaaa attcgcgtta aattttttgtt aaatcagctc attttttaac caataggccg 420
145 aaatcggcaa aatcccttat aaatcaaaag aatagaccga dataggggttg agtgttgttc 480
146 cagtttggaa caagagtcca ctattaaaga acgtggactc caacgtcaaa gggcgaaaaa 540
147 ccgtctatca gggcgatggc ccactacgtg aaccatcacc ctaatcaagt tttttggggt 600
148 cgaggtgccg taaagcacta aatcggaacc ctaaagggag cccccgattt agagcttgac 660
149 ggggaaagcc ggcgaacgtg gcgagaaagg aagggaagaa agcgaaagga gcgggcgcta 720
150 gggcgctggc aagtgtagcg gtcacgctgc gcgtaaccac cacacccgcc gcgcttaatg 780
151 cgccgctaca gggcgcgtca ggtggcactt ttcggggaaa tgtgcgcgga accctattt 840
152 gtttattttt ctaaatacat tcaaatatgt atccgctcat gagacaataa ccctgataaa 900
153 tgcttcaata atattgaaaa aggaagagta tgagtattca acatttccgt gtcgccctta 960
154 ttccctttttt tgcggcattt tgccttcctg tttttgctca cccagaaacg ctggtgaaag 1020
155 taaaagatgc tgaagatcag ttgggtgcac gagtgggtta tcgaactg gatctcaaca 1080
156 gcggtaagat ccttgagagt tttcgccccg aagaacgttt tccaatgatg agcacttta 1140
157 aagttctgct atgtggcgcg gtattatccc gtattgacgc cgggcaagag caactcggtc 1200
158 gccgcataca ctattctcag aatgacttgg ttgagtactc accagtcaca gaaaagcatc 1260
159 ttacggatgg catgacagta agagaattat gcagtgctgc cataaccatg agtgataaca 1320
160 ctgcggccaa cttacttctg acaacgatcg gaggaccgaa ggagctaacc gcttttttgc 1380
161 acaacatggg ggatcatgta actcgccttg atcgttggga accggagctg aatgaagcca 1440
162 taccaaacga cgagcgtgac accacgatgc ctgtagcaat ggcaacaacg ttgcgcaaac 1500
163 tattaactgg cgaactactt actctagctt cccggcaaca attaatagac tggatggagg 1560
164 cggataaagt tgcaggacca cttctgcgct cggcccttcc ggctggctgg tttattgctg 1620
165 ataaatctgg agccggtgag cgtgggtctc gcggtatcat tgcagcactg gggccagatg 1680
```

RAW SEQUENCE LISTING   DATE: 02/27/2002
PATENT APPLICATION: US/09/914,604   TIME: 13:52:50

Input Set : A:\Pa99121.app
Output Set: N:\CRF3\02272002\I914604.raw

```
166 gtaagccctc ccgtatcgta gttatctaca gcacggggag tcaggcaact atggatgaac 1740
167 gaaatagaca gatcgctgag ataggtgcct cactgattaa gcattggtaa ctgtcagacc 1800
168 aagtttactc atatatactt tagattgatt taaaacttca tttttaattt aaaaggatct 1860
169 aggtgaagat ccttttttgat aatctcatga caaaaatccc ttaacgtgag ttttcgttcc 1920
170 actgagcgtc agaccccgta gaaaagatca aaggatcttc ttgagatcct tttttttctgc 1980
171 gcgtaatctg ctgcttgcaa acaaaaaaac caccgctacc agcggtggtt tgtttgccgg 2040
172 atcaagagct accaactctt tttccgaagg taactggctt cagcagagcg cagataccaa 2100
173 atactgtcct tctagtgtag ccgtagttag gccaccactt caagaactct gtagcaccgc 2160
174 ctacatacct cgctctgcta atcctgttac cagtggctgc tgccagtggc gataagtcgt 2220
175 gtcttaccgg gttggactca agacgatagt taccggataa ggcgcagcgg tcgggctgaa 2280
176 cggggggttc gtgcacacag cccagcttgg agcgaacgac ctacaccgaa ctgagatacc 2340
177 tacagcgtga gctatgagaa agcgccacgc ttcccgaagg gagaaaggcg gacaggtatc 2400
178 cggtaagcgg cagggtcgga acaggagagc gcacgaggga gcttccaggg ggaaacgcct 2460
179 ggtatcttta tagtcctgtc gggtttcgcc acctctgact tgagcgtcga ttttttgtgat 2520
180 gctcgtcagg ggggcggagc ctatggaaaa acgccagcaa cgcggccttt ttacggttcc 2580
181 tggccttttg ctggcctttt gctcacatgt tctttcctgc gttatcccct gattctgtgg 2640
182 ataaccgtat taccgccttt gagtgagctg ataccgctcg ccgcagccga acgaccgagc 2700
183 gcagcgagtc agtgagcgag gaagcggaag agcgcccaat acgcaaaccg cctctccccg 2760
184 cgcgttggcc gattcattaa tgcagctggc acgacaggtt tcccgactgg aaagcgggca 2820
185 gtgagcgcaa cgcaattaat gtgagttagc tcactcatta ggcacccag gctttacact 2880
186 ttatgcttcc ggctcgtatg ttgtgtggaa ttgtgagcgg ataacaattt cacacaggaa 2940
187 acagct                                                           2946
190 <210> SEQ ID NO: 5
191 <211> LENGTH: 19
192 <212> TYPE: DNA
193 <213> ORGANISM: Artificial Sequence
195 <220> FEATURE:
196 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
197       Oligonucleotide
199 <400> SEQUENCE: 5
200 gttttcccag tcacgacgt                                              19
203 <210> SEQ ID NO: 6
204 <211> LENGTH: 23
205 <212> TYPE: DNA
206 <213> ORGANISM: Artificial Sequence
208 <220> FEATURE:
209 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
210       Oligonucleotide
212 <400> SEQUENCE: 6
213 tccggacgtc tcaggctaat gtt                                         23
216 <210> SEQ ID NO: 7
217 <211> LENGTH: 24
218 <212> TYPE: DNA
219 <213> ORGANISM: Artificial Sequence
221 <220> FEATURE:
222 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
223       Oligonucleotide
225 <400> SEQUENCE: 7
226 tgtaacgaca cattgctgga tacc                                        24
```

RAW SEQUENCE LISTING   DATE: 02/27/2002
PATENT APPLICATION: US/09/914,604   TIME: 13:52:50

              Input Set : A:\Pa99121.app
              Output Set: N:\CRF3\02272002\I914604.raw

```
229 <210> SEQ ID NO: 8
230 <211> LENGTH: 24
231 <212> TYPE: DNA
232 <213> ORGANISM: Artificial Sequence
234 <220> FEATURE:
235 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
236       Oligonucleotide
238 <400> SEQUENCE: 8
239 atataactct cgctccttga taac                                        24
242 <210> SEQ ID NO: 9
243 <211> LENGTH: 24
244 <212> TYPE: DNA
245 <213> ORGANISM: Artificial Sequence
247 <220> FEATURE:
248 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
249       Oligonucleotide
251 <400> SEQUENCE: 9
252 aggcgtctga ggctgcggct atgg                                        24
255 <210> SEQ ID NO: 10
256 <211> LENGTH: 24
257 <212> TYPE: DNA
258 <213> ORGANISM: Artificial Sequence
260 <220> FEATURE:
261 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
262       Oligonucleotide
264 <400> SEQUENCE: 10
265 aacccgtcgc gacgagagtc taag                                        24
268 <210> SEQ ID NO: 11
269 <211> LENGTH: 24
270 <212> TYPE: DNA
271 <213> ORGANISM: Artificial Sequence
273 <220> FEATURE:
274 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
275       Oligonucleotide
277 <400> SEQUENCE: 11
278 gatatacgtg atatattttg attg                                        24
281 <210> SEQ ID NO: 12
282 <211> LENGTH: 28
283 <212> TYPE: DNA
284 <213> ORGANISM: Artificial Sequence
286 <220> FEATURE:
287 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
288       Oligonucleotide
290 <400> SEQUENCE: 12
291 gatcggtatc cagcaatgtg tcgttaca                                    28
294 <210> SEQ ID NO: 13
295 <211> LENGTH: 28
296 <212> TYPE: DNA
297 <213> ORGANISM: Artificial Sequence
```

VERIFICATION SUMMARY
PATENT APPLICATION: **US/09/914,604**

DATE: 02/27/2002
TIME: 13:52:51

Input Set : **A:\Pa99121.app**
Output Set: **N:\CRF3\02272002\I914604.raw**